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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/539,251	06/15/2005	Martijn Henri Richard Lankhorst	NL03 0259 US1	6481

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EXAMINER	
LEE, EUGENE	

ART UNIT	PAPER NUMBER
2815	

NOTIFICATION DATE	DELIVERY MODE
08/15/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ip.department.us@nxp.com

Office Action Summary	Application No.	Applicant(s)	
	10/539,251	LANKHORST ET AL.	
	Examiner	Art Unit	
	EUGENE LEE	2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 July 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11 and 17-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11 and 17-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Due to claims 17-22 not being addressed in the 103 rejection, this new final rejection is being issued.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1 thru 11, and 17 thru 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "crystalline and amorphous materials" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. In view of the 112 rejection, claims 1 thru 7, 9 thru 11, and 17 thru 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Ovshinsky et al. 5,912,839. Ovshinsky discloses (see, for example, FIG -2) a memory element (electric device) comprising a memory material (phase

change material) 36. In column 18, lines 31-47, Ovshinsky discloses a Te-Ge-Sb alloy wherein Te may comprise 23-58%, Ge may comprise 8%-30%, and Sb will comprise the rest. With such a scenario, a may equal 67, and b may equal 23.

Regarding the limitation "via crystallization initiating at an interface between crystalline and amorphous materials", this is a product by process limitation of changing the phase change material. Since Ovshinsky discloses a material that fits into the applicant's limitation in claim 9 (i.e. $Sb_{67}Te_{23}Ge_{10}$ which is disclosed in column 18, lines 31-47 of Ovshinsky), it would be inherent that such a property would be present in the phase change material of Ovshinsky.

Regarding claim 6, see, for example, column 17, lines 58-60 wherein Ovshinsky discloses that the phase change material includes one or more elements, which may not include Te.

Regarding claim 18, see, for example, FIG-2 wherein Ovshinsky discloses a memory element (electric device) 14 comprising a single crystal silicon semiconductor wafer (crystallization layer) 10, and memory material (fast growth phase change material) 36.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ovshinsky et al. 5,912,839. Ovshinsky discloses (see, for example, column 17, lines 58-60) discloses that the

phase change material includes one or more elements, which may include Sn. Ovshinsky does not disclose the concentrations which range in total between 5 and 30 atomic percent. However, the concentrations are result effective variables that one of ordinary skill in the art would optimize to store data. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention was made to have the concentrations which range in total between 5 and 30 atomic percent, since it has been held that discovering the optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

Response to Arguments

7. Applicant's arguments filed 7/29/08 have been fully considered but they are not persuasive.

Regarding the applicant's argument on the bottom of page 5 of the amendment filed 7/29/08 that the 112 rejection is improper because it is not fully supported, this argument is not persuasive. The 112 rejection does not regard whether the limitation "crystalline and amorphous material" is fully supported but whether the limitation has antecedent basis. In this case, the limitation does not have antecedent basis because the claim does not address where the "crystalline and amorphous materials" comes from. Further the claim becomes indefinite if the crystalline and amorphous materials refer back to the phase change material since the phase change material is singular and would be contradictory if the phase change material contained both crystalline and amorphous materials.

Regarding the applicant's arguments on page 6 that the cited claim limitations (i.e. a phase change material being changeable between a first phase and second phase via crystallization initiating at an interface between crystalline and amorphous materials) are not inherent, this argument is not persuasive. Ovshinsky discloses a material that fits into the applicant's limitation in claim 9 (i.e. $Sb_{67}Te_{23}Ge_{10}$ which is disclosed in column 18, lines 31-47 of Ovshinsky), therefore, it would be inherent that such a property would be present in the phase change material of Ovshinsky. Otherwise, claim 9 would be contradictory to claim 1. Further the claim is directed towards structure wherein the final structure is a crystallized phase change material. Whatever methods are used to make this crystallized structure, they do not carry patentable weight since the claims are directed towards device. Therefore, the applicant's claims like claim 2, fall within product-by-process limitations.

Product-by-Process Limitations

While not objectionable, the Office reminds Applicant that "product by process" limitations in claims drawn to structure are directed to the product, per se, no matter how actually made. *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also, *In re Brown*, 173 USPQ 685; *In re Luck*, 177 USPQ 523; *In re Fessmann*, 180 USPQ 324; *In re Avery*, 186 USPQ 161; *In re Wethheim,* 191 USPQ 90 (209 USPQ 554 does not deal with this issue); *In re Marosi et al.,* 218 USPQ 289; and particularly *In re Thorpe*, 227 USPQ 964, all of which make it clear that it is the patentability of the final product per se which must be determined in a "product by process" claim, and not the patentability of the process, and that an old or obvious product produced by a new method is not patentable as a product, whether claimed in "product by process" claims or

otherwise. Note that applicant has the burden of proof in such cases, as the above case law makes clear. Thus, no patentable weight will be given to those process steps which do not add structural limitations to the final product.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

INFORMATION ON HOW TO CONTACT THE USPTO

Any inquiry concerning this communication or earlier communications from the examiner should be directed to EUGENE LEE whose telephone number is (571)272-1733. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Parker can be reached on 571-272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Eugene Lee
/Eugene Lee/
Primary Examiner, Art Unit 2815
August 11, 2008

Application Number	Application/Control No.	Applicant(s)/Patent under Reexamination	
	10/539,251	LANKHORST ET AL.	
	Examiner	Art Unit	
	EUGENE LEE	2815	